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The International Journal of Orthodontia

Editor: Martin Dewey, D.D.S., M.D.

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ORIGINAL ARTICLES

REPORT OF A CLASS II, DIVISION 2 CASE, TREATED WITH DR. EDWARD H. ANGLE'S NEW PIN AND TUBE REGULATING APPLIANCE.

BY A. H. KETCHAM, D. D. S., DENVER, COLO.

I HAVE chosen a case in the Second Division of Class II, a boy eleven years of age. Fig. 1 shows the position of the teeth at the beginning of treatment. Attention is called to the long overbite of the upper central incisors and to the left lower second temporary molar being impacted; or, having been caught between the mesial surface of the first permanent molar and the distal surface of the first premolar.

In the treatment of this case, as shown in Figs. 1 and 2, D-bands were fitted to the upper first permanent molars; then the buccal tubes were unsoldered and moved distally so as to give the maximum length of arch wire reaching from the lateral incisors to the square end sections. Bands carrying Angle's arch pin tubes were constructed and cemented to the incisors, tubes being placed perpendicular to the long axis of the teeth and a little distal of the median line to aid in the rotation of the teeth as described later (Fig. 3). Square end sections were selected, placed in the molar band tubes with a length of the thread on the bolt exposed, the thread corresponding to the depth of telescoping of the square end section and exposed between the square end telescoping portion of the head of the nut.

The next step is to select a middle arch section of proper length, following technic described by Angle in the *Dental Cosmos* for August, 1912, and January, 1913. Anneal or soften this wire by placing it in the arch annealer (Fig. 4), heat to a red color, and plunge into water simultaneously with the breaking of the electric current by turning the knob upon the right side of the annealer. This softens the arch wire to a remarkable degree so that it may be bent to conform to the positions of the irregular teeth without danger of breaking. Slip one end of the middle arch section into one square

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Fig. 1.—Side view of case before treatment.

Fig. 2.—Occlusal view of Fig. 1.

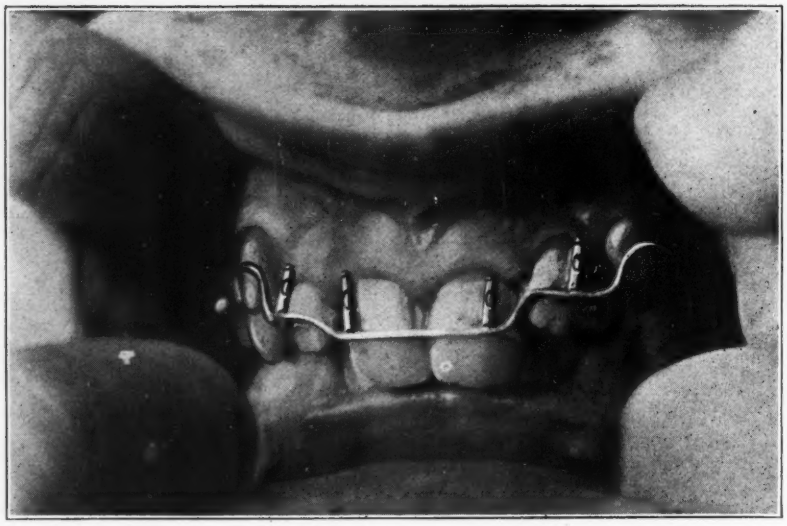

Fig. 3.—Front view of patient's teeth showing appliance on the teeth.

end section, then bend the arch to conform to the labial surfaces of the lateral and central incisors upon that side of the mouth, and then attach pins as described by Angle. The appliance was finished July 30, 1912. Fig. 3 shows it in place upon the teeth.

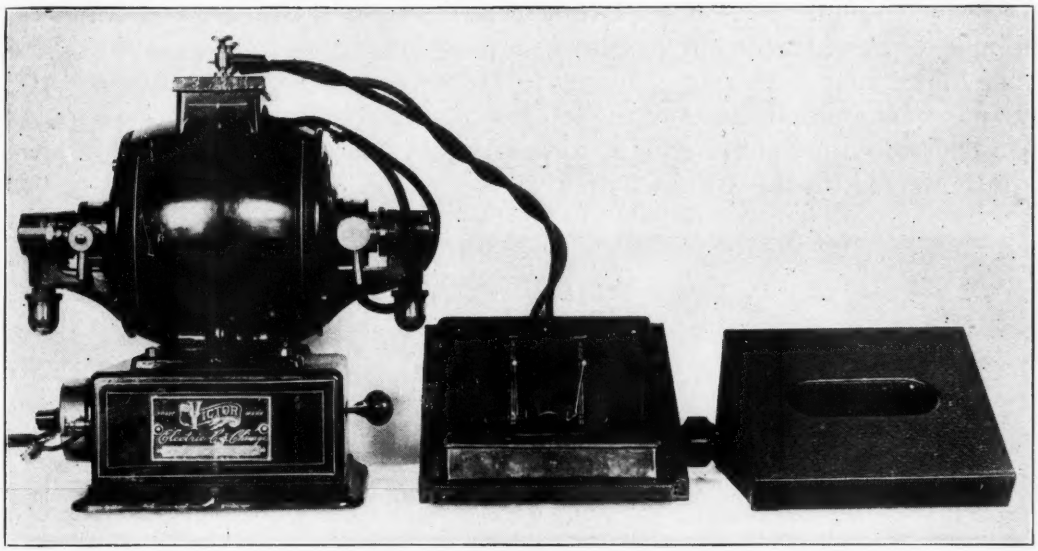

Fig. 4.—Angle-Ketcham Arch Annealer connected to a Victor No. 8 cautery transformer for direct current.

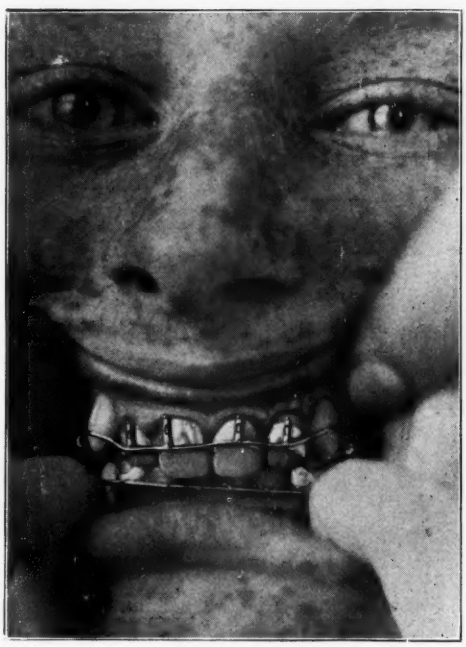

Fig. 5.—Angle's new pin and tube appliance on upper teeth, with regular expansion arch on lower.

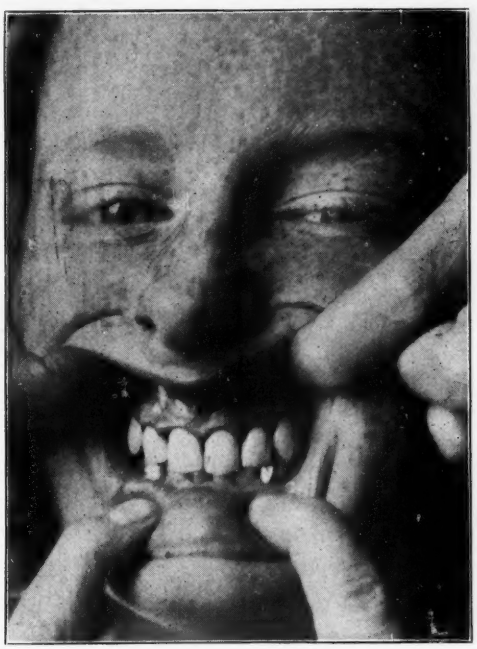

Fig. 6.—Upper teeth corrected. Band on lower canines to hold lingual retaining arch.

Dr. Angle had asked me to try the new sectional arch, .0038 inch diameter, used in the same manner as the old expansion arch; so, after bands were fitted to the lower first permanent molars, one of these arches with the square end sections was placed upon the lower teeth. To the right lower

canine and left central incisor were cemented bands with spurs upon the lingual side to rotate. The use of this arch was quite successful, although I could see no advantage over the one-piece arch of the same diameter. It possesses the disadvantage of being inelastic in the portion occupied by the square end section, so that it is difficult to bend the arch at this point. The .030 inch middle section arch transmitting force to the teeth through the pin and tube attachment possesses so many advantages (Fig. 2) that I am convinced that if I were starting to treat the case again I would apply bands with arch pin tubes to the left lower central incisor and to the canines, and possibly the right lateral incisor, and ligate the rest of the teeth that were to be moved, to the .030 inch arch.

Fig. 7.—Models of case before and after treatment.

Attention has been called to the impacted or retained left lower second temporary molar. X-rays revealed the presence of the second premolar, so the approximal sides of the temporary tooth were trimmed, making it a little narrower. A piece of wire bent in the form of a corkscrew was cemented in a shallow cavity in the occlusal surface of this tooth, after which the wire was tied to the arch by means of silk ligatures and the tooth loosened.

I take it for granted that all the readers of this Journal are familiar with the difference in principle of application of power between the new pin and tube appliance and the old expansion arch. With the expansion arch the force is transmitted to all the teeth, excepting those carrying anchorage bands, through ligatures. As soon as the teeth move, the ligatures slip; while with Angle's new appliance the force is transmitted to the teeth by a

telescoping and locking of the pin, which is attached to the arch wire, in the tube soldered to the bands which are cemented to the teeth. By this method of transmitting force there is no loss of power, and all the spring given the arch wire in adjustment is transmitted to the teeth; therefore extreme care must be taken in adjusting the arch wire to have the force of just the right amount and to have the arch wire, especially the ends, lie in exactly the position desired. I have found that sometimes while straightening the anterior portion of the arch wire the ends are thrown too great a distance apart, increasing the tension upon the buccal teeth, and unless extreme care is exercised, overexpansion in the buccal region exists.

September 9, 1912, hooks were soldered to the upper arch a short distance posterior to the lateral incisor pins, for the use of intermaxillary liga-

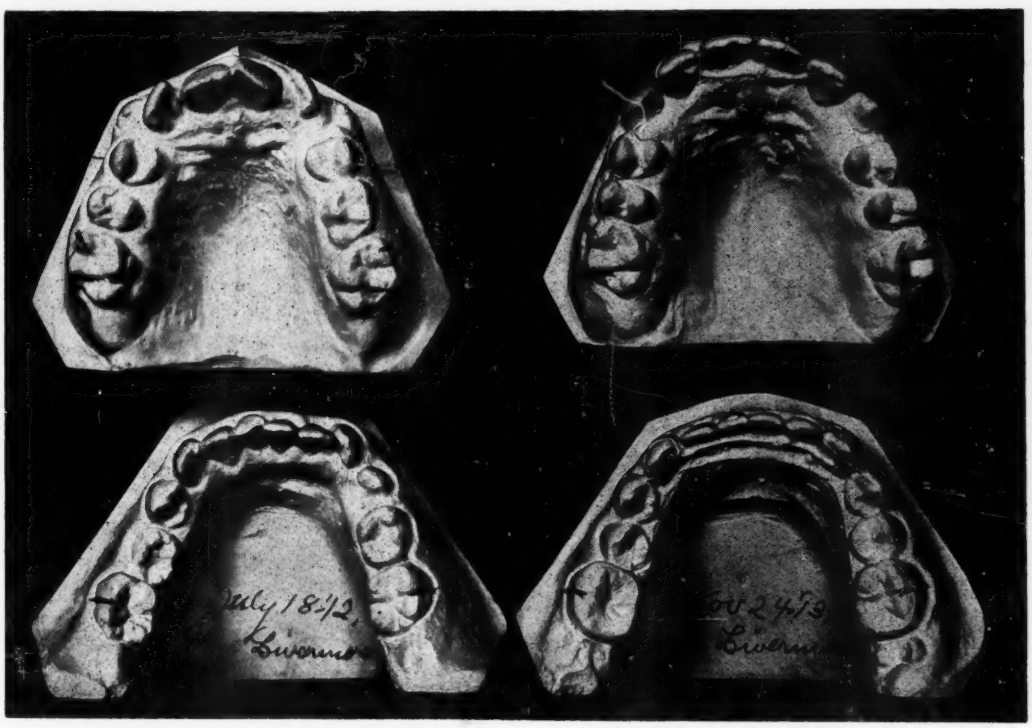

Fig. 8.—Occlusal view of case before and after treatment, showing lingual retention.

tures. The ligatures were worn fastened to the buccal tubes upon the lower appliance, the same as though the old appliance had been used. These are shown in Fig. 5 from a photograph made in July, 1913.

The new appliance was adjusted but eight times during the active period of treatment (July, 1912, to October, 1913). During these adjustments care was taken to straighten the arch wire only enough to throw the pins just the width of the walls of the tubes in the direction that it was desired to move the teeth. To rotate the incisors the arch wire was bent anterior to each pin so that it rested rather hard against the labio-mesial angle of each tooth. To lengthen the lateral incisors the arch was gradually straightened and bent to carry the lateral incisors downward. To gain space for the canines the loop in the arch wire over these teeth was gradually straightened and the nut upon the square end sections kept tightened. In adjusting the arch wire

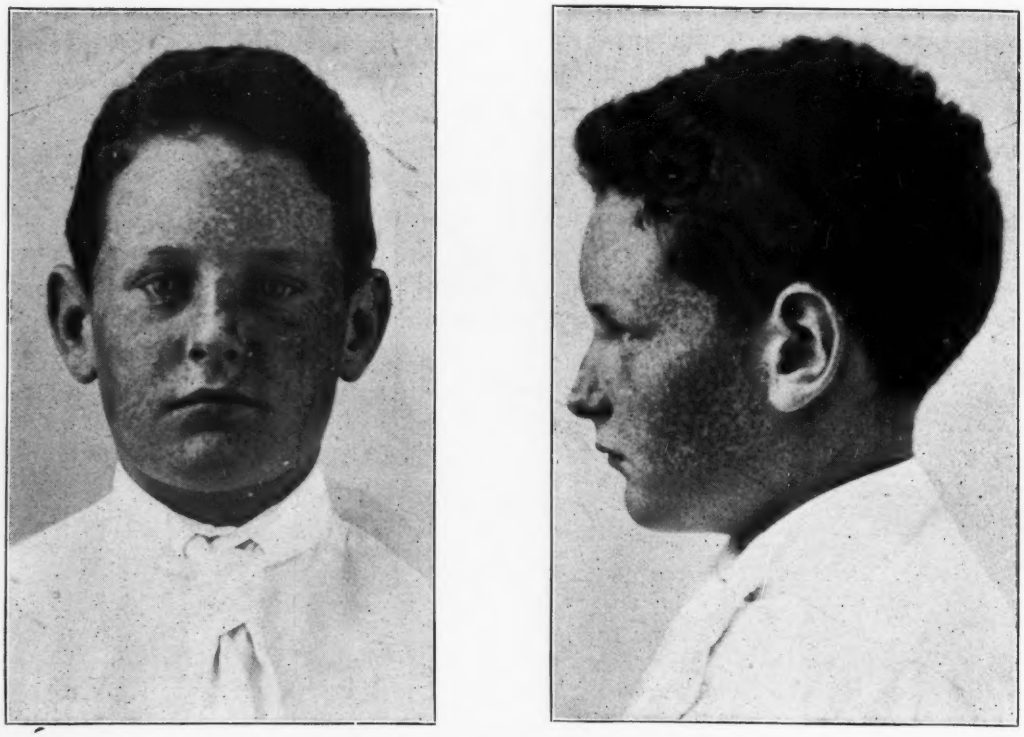

Fig. 9.—Front and side view of patient whose case is shown in Fig. 1.

Fig. 10.—Front and side view of patient after treatment as shown in Fig. 7, lower models.

Fig. 11.—Front and side view of a Class III case begun with the old appliance and finished with Angle's new pin and tube appliance.

no attempt was made to move the roots of the upper incisors labially by bending the ends of the pins.

In September, 1912, the upper first premolars were banded and attached to the arch wire. This process was to move these teeth buccally.

Fig. 6 shows the position of the anterior teeth October 3, 1913. Models of the teeth made before and also after treatment are shown by Fig. 7, giving buccal views; while the occlusal aspect is shown by Fig. 8. The face before and after treatment is shown by Figs. 9 and 10.

I would recommend to those orthodontists who are just starting to use the new Angle pin and tube appliance, that they first apply it to simple cases or those cases where further bone development is needed after treatment with the old form of appliances. In cases where the desired bone development has not followed tooth movement with the old appliance, the results obtained by the use of the new appliance are most gratifying. A case illustrating this is shown by Fig 11. This was a Class III case, and treatment was started in February, 1909. The condition of the face is shown by the left-hand photographs. The old Angle expansion arches and intermaxillary ligatures were worn from February, 1909, until February, 1910; then retainers were worn until October, 1912, when the new appliance was placed upon the upper teeth. The result in bone development is shown by the right-hand profile which was made from photographs taken May 29, 1914, when the new appliances were removed.

In the full-face photographs (Fig. 11), taken on the same dates as the profiles, the patient is seen smiling.

SOME POINTS OF COMMON INTEREST TO THE RHINOLOGIST AND THE ORTHODONTIST.*

BY DANIEL M'KENZIE, M. D., F. R. C. S.
Surgeon Central London Ear and Throat Hospital.

THE SUBJECT of palatal and maxillary deformity has been discussed *ad nauseam* in rhinological circles, and we have long recognized that there are a few cases in which the removal of adenoids fails to cure the patient of the mouth-breathing habit. Of these patients a small number remain mouth-breathers from sheer inertia of habit, but by far the greatest number do so because of the malocclusion of the teeth which results from a deformed palate. This fact, as I have said, has long been admitted by the rhinologist. But it is only of late years that we have begun to learn from the orthodontist that this hitherto impregnable rock of pathology can be remoulded nearer to a normal shape in such wise as to restore the power of breathing through the nose with the lips closed; an advance in therapeutics which, in this country [England] at least, is not yet so widely known as it ought to be either by medical men or by the laity. We have learned that the inability to close the mouth is due either to the protrusion of the upper central incisors from an abnormally long alveolar process, relative to the upper lip, or to malocclusion of the first permanent molars, or to both factors combined. And as these abnormalities are due in turn to narrowing of the bony palate and crowding of the teeth, my first remarks will be addressed to the theories which seek to explain the origin of the narrow palate. In the second place, I propose to direct your attention, as orthodontists, to some of the later nasal effects of the narrow palate. And, in the third place, I shall conclude with a glance at the question of treatment from the rhinologists point of view.

Firstly, with regard to the mechanism which produces narrowing of the palate. Nearly four years ago, in a paper read before the British Society for the Study of Orthodontia, I reviewed and criticized several of the theories then held to account for the abnormality. The first of the theories discussed was that the deformity of the palate is due to the compression exercised by the facial muscles and the soft tissues of the cheeks upon the alveolar process, as a result of which the broadening of the palate is hindered or prevented, while the premaxillary segment, along with the teeth it bears, pushes forward in the direction of least resistance.

The objections to this theory are, first, that the pressure exercised by the soft parts of the face upon the maxillæ must be extremely slight even in mouth-breathers, since for purposes of respiration the mouth opens but a very little way. And it is also worthy of note, that in the attitude of rest, when the muscular tension is at its lowest grade, the teeth of the lower jaw lie, not in contact with the teeth of the upper jaw, but separated from them by a distance of several millimeters. That is to say, that the position of

*Read before the European Orthodontia Society, London, 1913.

lowest muscular stress and pressure is with the mouth slightly open. It must also be remembered that the open mouth is habitual in play.

On the other hand, the weight of these objections is reduced when we remember, with regard to the slightness of this pressure, that even the most delicate pressure if it is frequently repeated or, still more, if it is continuous, is capable of effecting great alterations in the shape and disposition of bone. Secondly, that the pull and drag are greater when the patient is asleep and snoring. Further in support of this theory we may cite the following circumstances.

I am sure it must often have struck you that the narrow palate, the projecting upper incisors, and the whole configuration of what I have termed the rodent face, represent the perpetuation and fixation in the bony skeleton of the facial attitude assumed by children who are suffering from nasal obstruction. An habitual attitude becomes stereotyped and fixed by an alteration in the shape of the bones. Indeed, after the faulty eruption of the teeth the habitual attitude is not only fixed but exaggerated and even caricatured; with this apsect of the subject we deal later.

In this respect, then, the narrow palate and the rodent face are deformities, the development of which recalls those osseous malformations of the trunk and limbs which are the result of the adoption and maintenance of improper attitudes.

We sometimes hear people speaking as if the bone of the maxillæ may be of a peculiar and exceptional type, liable to different pathological changes from those of other bones, and plastic and malleable in a manner not characteristic of osseous tissue elsewhere in the body. Such is not the case. Bone is everywhere plastic, and everywhere responds to alterations of strain, stress and tension.

The conformation of the bones of the skeleton is everywhere the resultant of three forces—gravity, the action of growth, and the action of the muscles.

A normal balance of these forces induces a normally-shaped bone. But deformity ensues if any one of the three forces is relatively weaker than the others, as in the case of flat-foot, knock-knee, etc. For example, it is the weakness and lack of balance in the muscular forces together with the relatively overpowerful action of gravity which compels the patient to adopt an exaggerated attitude of rest, and when this attitude is stereotyped in bony structure, then we get the permanent deformity. That is to say, the position favored and adopted by the muscles, ligaments and other soft structures, is copied after a time by the bones which alter their shape in order to do so.

It is the same with the jaws, in the first instance at all events—although, of course, the role played by gravity in the production of their deformities is one of no importance. It is impossible to doubt that the pull of the cheeks and soft parts, when the mouth is open, does not play some part in the production of the narrow palate. Their action is however very delicate and is probably only passive; because, as orthodontists have shown us, if the forces making for normal expansion in the jaws are reenforced, then the resistance of these soft parts count for nothing. As it is, however, in these cases, if they are left to nature all the forces acting on the jaws unite and harmonize,

not to mould the jaws to the normal shape but to aggravate and to perpetuate an already existing deformity.

There is another and a more serious objection to the presumption of the action of the soft parts, and to it I refer below.

The second theory which I debated in my former paper was that which refers to the normal shape of the adult superior maxilla and to the preponderating influence of the tongue. This organ, which normally occupies the vault of the palate and by its long continued pressure moulds that arch, is withdrawn from the palate when the mouth is used for breathing. The expanding force being thus withdrawn, the jaws remain narrow. In support of this theory may be cited the fact that in certain slow-growing tumors of the mouth and in the condition known as macroglossia, extraordinary enlargement and widening of the palatal and mandibular arches frequently appears.

Both with regard to this theory and to the previous one, there is one circumstance which constitutes a most serious difficulty in the way of our accepting either of them alone, or both of them together for that matter, as the invariable cause of narrowing of the palate. This circumstance is that the Gothic palate is sometimes found in people in whom mouth-breathing seems never to have been present. It is true that only a very small proportion of cases give such a history. It is also true that to rely, as we must, upon the patients own personal recollections in order to establish the presence or absence of early mouth-breathing, is to lay oneself open to be deceived. Thus there is quite a good priori objection to admitting the existence of such a circumstance as the narrow palate in people who have always breathed normally. At the same time the evidence in its favor is, I believe, so strong that a theory which has to ignore or deny the existance of this fact is so much the weaker, in my opinion.

Now, the existence of this fact (if fact it be) proves that for the production of the narrow palate some cause other than the compressive action of the soft parts, and other than the expanding action of the tongue, and other than both of these actions taken together, must at times be present. Is there a third explanation which will account for the narrowing of the palate? I believe that there is, and this explanation is that, namely, which ascribes the deformity not so much to improper respiration as to an absence or deficiency of normal mastication. Moreover, as I hope to show, it is possible to assign to this factor a predominating position in the group of causative factors and to see it in operation both in nose-breathers and in mouth-breathers. As this factor of mastication appears to be of much importance I will allude to it at some length.

The theory may be enunciated as follows: The development of the maxillæ and palate is conditioned in response to pressure stimuli of strain and stress imparted to the bone by the teeth in the act of mastication.

In general terms we speak of two types of maxillæ, the broad and the narrow, the broad being the normal.

In the healthy individual, efficient mastication during the period of the milk teeth leads to an arrangement of the teeth of the upper jaw relative to those of the lower, in such wise, as Noyes, quoting Angle, says, that "the buc-

cal cusps of the lower teeth are locked between the cusps of the upper so that in the lateral grinding movements the buccal slopes of the uppers exert a powerful influence in widening and rounding the arch." In other words, the pressure of the lower teeth tends to force the upper teeth in an outward direction, and in response to this stimulus, the upper jaw and palate broaden out. The theory may be more clearly expressed thus: the width of the jaws depends upon and is proportionate to the amount of mastication.

Response on the part of bone to stimuli of this nature is common, as Arbuthnot Lane has pointed out, in the other bones of the skeleton. Indeed, so frequently is this response, that the writer lays down several rules or laws which may be thus summarized: that pressure and strain produce changes in the form and function of joints, and even that they produce new joints. Further, he goes on to say "the normal form of the skeleton and the soft parts depend upon a normal combination of attitudes of activity with attitudes of rest," preponderance of either one of these resulting in deformity. Lane describes and depicts many examples illustrating these generalizations —great and curious alterations in the structure and disposition of bones and joints, which, by the way, were formerly regarded as evidence of disease (e. g., the changes which take place in the elbow joint of a coal-trimmer resulting from his occupation, etc.).

If this occurs in the adult bone how much more likely is it liable to occur in the comparatively soft, growing bones?

Thus we arrive at the conclusion that the chief, if not the only cause of the normal shape of the jaws, is the alternation of the exercise of normal mastication with periods of rest. And, that with insufficient mastication, the attitude of rest being preponderantly affected, as we have already seen, the jaw fails to broaden and its bulk is cramped and distorted. If it were possible for the attitude of use or exercise to be exaggerated the result would be a jaw which was abnormally broad—but I am not aware whether this has ever been observed.

The detailed effect of the narrow jaw upon the second dentition is, to quote Noyes again, that "the disto-buccal cusps of the upper teeth 'lock' between the buccal cusps of the lower, throwing the entire mandible half the width of the molar distal to its normal position," which not "only disturbs the relation of each permanent tooth as it erupts, but entirely changes the distribution of the functional forces upon the bone."

As a consequence of the malocclusion of the first permanent molars, the forces of mastication are impressed upon the upper jaw in such a direction that the lower molars tend to force the upper teeth in an inward direction, and in this way the previous tendency to the formation of a narrow palate is strengthened and intensified.

There are thus two stages in the production of the Gothic palate. First, insufficient mastication and the habitual assumption of the attitude of rest leads to a somewhat narrow palate; secondly, the vicious eruption of the first permanent molar perpetuates, intensifies and finally fixes the error in development. It is to be noted that while insufficient mastication is the primary morbid factor, it is only operative during the first stage. In the second stage, after the eruption of the molars if their malocclusion is not corrected,

the more efficient the mastication is, the greater must be the resulting deformity.

But, as we have just said, the first cause of the malformation lies in insufficient mastication prior to the eruption of the permanent molars, that is, before the eighth year. This is a truth which is not yet popularly prevalent.

Let us see how the view of the question fits in with the facts as we know them.

We shall, first of all, consider the production of the narrow palate in people who are mouth-breathers, and secondly, we shall consider the production of the narrow palate in people who have never been mouth-breathers.

We turn, first of all, to the mouth-breathers.

With regard to adenoids and their place in the etiology of mouth-breathing, the following may be taken as facts. Practically speaking, before the eighth year, adenoids are the only cause of mouth-breathing, the deformity of the palate and the consequent septal deviations do not exist so early as this. In some adenoid children mouth-breathing is habitual, even in early life. I have known in a child at the breast, the act of suckling seriouly incommoded by the presence of adenoids. (By the way, another fact not too widely appreciated is that in the new-born infant, quiet respiration is not possible save through the nose. If the nose is held or obstructed, the child in breathing through the mouth also cries; and I have know of an infant's bodily strength dangerously weakened by loss of sleep resulting in this way from nasal obstructions.)

In some adenoid children, mouth-breathing is habitual and constant; in others and I believe the larger number, the mouth-breathing is not continuous. It is only occasional, and depends upon the presence or absence of swelling of the adenoid tissue. This in turn depends upon the presence or absence of catarrh, or other infection. As time goes on, however, we must remember that the mouth-breathing tends to become habitual.

We have already shown that it is in mouth-breathers that the influence of the tongue and of the soft parts of the face must operate most effectively, nevertheless those factors of themselves would fail to account for the occurrence of the narrow palate. Their action, if present at all, must be slight, if not altogether negligible.

But does mouth-breathing encourage insufficient mastication? Does it impede mastication? There can be no doubt that it does. Watch an adenoid patient at his meals. During mastication, if the nasal obstruction is partial, he has to stop chewing now and again to supplement the insufficient nasal respiration by a breath through the mouth; or, if the nasal obstruction is considerable, the poor child has to do his breathing through his mouth all the time he is masticating. In either case prolonged comfortable mastication is discouraged, and the food is bitten, champed and bolted. It is possible to bite and breathe through the mouth, but it is difficult to grind and to breathe through the mouth, because the necessary movements of the tongue are then in abeyance. Thus the old rule in polite nurseries—"Chew with your lips closed"—is physiologically sound, only many children are unable to obey that rule. And in them the sum total of pressure stimuli

received by the growing bone is, in the mass, enormously reduced. The attitude of rest is, so to speak, habitual, and deformity ensues.

Secondly, we saw that one of the difficulties in the way of the other theories of causation, those of the pressure of the soft parts and of the tongue, is that the narrow palate may be found in persons who have never been mouth-breathers and have never had adenoids. Does our present theory account for these cases? Obviously it does. Insufficient mastication in early life, from whatever cause arising—whether due to mouth-breathing or not—will induce the deformity. And when we consider, as Dr. Sim Wallace has taught us, the prevalence of feeding young children upon messes which require little chewing, the wonder is that the narrow palate is not the rule in civilized communities.

Consequently it would seem that in this mastication theory we have an explanation which can account for all the facts as we know them and which leaves none of them awkwardly floating about to be ignored or forgotten.

Let us now summarize the conclusions we have come to regarding the genesis of the narrow palate.

1. Insufficient mastication during the period of the milk-teeth leads to slight relative narrowing of the palate.

2. As a result of this narrowing the first upper permanent molars erupt too near the middle line, and mesial to the position of their opponents, the first permanent lower molars.

3. The misdirected pressure upon the upper jaw induced by this malocclusion together with the consequent vicious eruption of the other permanent teeth, intensifies the narrowing of the palate, and the final ossification of the bone fixes it.

4. In mouth-breathers, the pressure of the soft parts of the face and the withdrawal of the tongue from the vault of the palate are probably also factors in the production of the narrow palate, but their influence is passive and subsidiary to that of insufficient mastication.

One of the effects of this argument is, of course, to enhance the importance of the first dentition period. During this period, the presence of adenoids, the excessive use of soft food, and everything which tends to discourage free mastication must be sought for and dealt with, *secundum artem*. Even thus early advice of the orthodontist must supplement the operation of the rhinologist.

I have an addition I should like to make to the foregoing account of the theories of deformity of the jaws. It does not amount however to anything more than a suggestion, but I give it for what it is worth.

In all the foregoing consideration the chief causes of the maxillo-palatal deformity are placed in the mouth. But, surely, the action of the nose is worthy of some consideration, and my suggestion is that in the absence of nasal breathing there is a lack of definite nerve stimuli which, possibly, in normal conditions favor the growth in width of the jaws and the expansion of the nasal chambers. This factor being absent or deficient in diminished nasal respiration, the skeleton of the nose will fail to broaden out.

Leaving now behind us the subject of the mechanism of production of the narrow palate, I wish to direct your attention to one or two consequences of the deformity—consequences which are not perhaps so fully appreciated as they deserve to be.

You are all familiar with the fact that the narrow palate is generally associated with a deviation of the nasal septum. This sequela, it is interesting to note, never appears before the age of seven. If a child under that age has a deviated septum the history will show that it is traumatic and not developmental in orgin. You are also aware that in many of these patients, by the time they have reached adult life, the total transverse measurement of the nasal chamber is very much reduced. Even in the normal nose, I may remind you, the nasal chamber consists of an irregular series of slits, never very broad. So that even a trifling encroachment upon the free space in the nose, whether by septal deflection or spurs, or by reduction in its total transverse diameter, seriously reduces its capacity, and places an obstacle in the way of free nasal breathing.

The cases with a reduced transverse nasal measurement are those in which operations are disappointing. Adenoids may be removed, but the patient still breathes through his mouth. The septum may be straightened—he still breathes through his mouth. Narrow anterior nares, with flabby and inactive alæ, may be widened—he still breathes through his mouth. Even the teeth may be rectified, so that the lips can be easily closed, and yet he still continues to breathes through his mouth. The fact is that the bony skeleton of the nose is at fault, and that unless you can widen it, efficient nose-breathing is impossible. And in adult life, after the completion of ossification, it is difficult or impossible to change for the better this faulty conformation of the face.

Now, in these cases, as well as in the multitudes of patients in whom timely correction of septal deformity is not made, the patient's health is liable to decline; so much so, that we can go so far as to say that the narrow palate tends to shorten life. Everyone has heard of the ailments in early life which follow nasal obstruction—the flat chest, the tendency to bronchitis, to pulmonary disease, to ear disease, and so on. But we do not hear so often the effects which follow the narrow or otherwise obstructed nose in later life. It is to these later effects that I wish to refer.

Man's great enemies in middle age are arteriosclerosis and the diseases which are grouped under the heading of "catarrh." With the former we have at present nothing to do, but with the later, much.

The narrow palate and face—"the rodent face"— is, as we have just seen, often associated with the narrow nose, and with the deflected septum. Whether as a consequence of disuse, as some think, or as the effect of badly distributed atmospheric pressure causing turbinal engorgement, as others think, or as a result of interference with free ventilation and drainage of the nasal sinus system, as others again believe, and among whom I may be included, there can be no doubt that these patients are more prone to catarrhal infection than their more generously constructed neighbors. They are attacked by catarrhs more frequently, they suffer from them more severely and they harbor them longer for periods than do ordinary people. More-

over, the attacks come to merge into one another until the disease becomes chronic. From these infections spring several pathological changes which tend to shorten life.

In the first place, old people in whom bronchitis, asthma and emphysema have come on in middle life, very often owe their diseases primarily to the narrow palate and to the obstructed nose. Further, septal deflection and nasal narrowing are common predisposing causes of nasal sinus suppuration, especially of the ethmoidal cells. And as ethmoiditis is the great cause of nasal polypus, you have here another source of bad health and danger to life which owes its presence to the same deformity. Thus the evil effects of early disabilities and bad health stereotyped, in the deformed case of the jaws and face lasting a lifetime, may not send in their account until after many years have passed. But the account must nevertheless be met when the time comes.

Thus in your orthodontic work you are engaged in a great labor for the prevention of disease not only in childhood but also later in life, and your efforts, when successful, make for the prolongation of life.

Having now touched upon certain topics in etiology and symptomatology, I turn to the third and final item in my paper, to one or two points in therapeutics.

Obviously, the first step in the treatment of deformity of the jaws, actual or impending, is the removal of the cause. This cause is usually adenoids, but very rarely septal deformity in early life at all events. Moreover, the removal should be effected before the age of eight. One should not wait until the deformity has appeared before operating but should operate to prevent, as soon as sufficient evidence of nasal obstruction even if transitory or partial, is forthcoming. Now, there is another point I should like to make here, and that is that even after thorough removal and still more after imperfect removal, before the age of eight, recurrence is by no means improbable. After the age of eight recurrence diminishes in frequency in proportion to the age of the patient. This tendency to recurrence should not be blinked at or ignored, but should be looked for and if it occurs, treated by a second removal. Otherwise, your efforts to reform the palate will be seriously hampered. Moreover, as the symptoms of nasal obstruction in these cases are the same as those induced by the bony deformity and malocclusion, the adenoids may recur without attracting any attention. For that reason, patients under treatment should be periodically examined for adenoids, even though they have already been operated on once or oftener.

A word now upon the mechanical treatment of the Gothic palate. I do not pretend to expert knowledge of the methods in vogue, but I understand that two methods are practiced—first, the gradual, and more recently, the rapid method. Of the two I am quite sure that the gradual is more certain and reliable. I have had one or two patients in whom the rapid method has been tried—one case I showed a couple of years ago at the Laryngological Section of the Royal Society of Medicine—with some measure of success, but I am sure that in remoulding a deformed bone, if a permanent result is desired, the aid of time must be secured.

Finally, I should like to say that from the rhinologist's point of view,

for nontraumatic septal deformities in children between eight and fourteen years of age, not only do your efforts to widen the jaws tend to prevent or hinder the development of deviations and their effects, but in those early years, orthodontic treatment is, in my opinion, the safest treatment for the septal deformity itself, because operations on the septum before fourteen may by removing the growing septal cartilage inhibit the antero-posterior growth of the nasal septum and so engender a stunted external nose. It is true that the result of early operation has been doubted, but the evidence against the fear is not strong enough to free us from hesitation and misgiving when we are asked to operate on children's septums.

After fourteen, however, the septum if deflected should be operated and that for two reasons: first, deviations are then more extreme and are less amenable to the action of dental treatment upon the shape of the jaws, and secondly, because the deflection may, like adenoids, act by perpetuating obstruction at a time when you are laboring to overcome it.

ORTHODONTIA AS VIEWED BY A GENERAL PRACTITIONER.

BY BURTON LEE THORPE, M.D., D.D.S.,
ST. LOUIS, MO.

A FEW years ago it was said the dental profession was overcrowded, but recent statistics resulting from the oral hygiene movement prove fifty per cent more dentists are needed to care for the masses suffering from carious teeth.

Investigation has proven school children, to gain efficiency in their studies, must be free from adenoids, caries and the irregularities incident to malocclusion.

The armies of the world require of all recruits, dental inspection, and a certain per cent of sound dental organs before enlistment, for unless the soldier can both bite and chew his food he is not worth much in a fight. Many do not appreciate this requirement.

A story is told of a would-be English recruit, who, after being rejected because of the condition of his teeth, returned to the enlisting officer and said: "Haven't you made a mistake? I want to shoot the Germans, not bite them."

If you observe the malformed faces and irregular teeth of the people on the streets and in public places, one must conclude at least a hundred per cent more practitioners of orthodontia are needed to regulate and correct the deformities of the teeth and face.

Only a few years back it was the practice to extract the four permanent molars to relieve a crowded arch; now it is considered a crime to extract any of the deciduous or permanent teeth, especially the first permanent molar.

The orthodontist, whose education is based on the occlusion of teeth, together with his knowledge of the laws of physics and dynamics, has long since exploded the pernicious theory and condemns the practice of extracting all four first molars, as this causes the second molar to tip forward about half its width and the teeth anterior to it eventually drop back one-half the distance, thereby destroying the mesio-distal relation. After a time, then, the lower incisors drop distal to the upper and bite linguo-gingivial to the upper teeth. As a result of this we have a long overbite as the approximal contact and architectural arrangement is lost, and all the teeth assume the line of least resistance, and the even balance of occlusal forces which nature intended, is shattered.

The facial deformity produced is one in which the chin is too close to the nose—in other words, a closed bite. To use the orthodontic nomenclature, infra-occlusion.

Another reason the loss of all four first molars destroys the contact point is because the upper and lower molars have different shapes and are different in mesio-distal diameters.

The eleventh commandment should be: *Remember that thou shalt preserve all the teeth, especially the first permanent molar which is the keystone to the jaws and dental arches.*

If the general practitioner would only realize the early loss of the deciduous teeth causes many malocclusions, that the early loss of the deciduous incisor allows the teeth to drift together, thus destroying the mechanism which makes possible the lateral development of bones in this region. Having lost the approximal contact, or wedging influence exerted in developing arches, overlapping of the teeth is the result.

The early loss of the deciduous canine allows the permanent incisor to drift toward the canine space, and there not being sufficient room then at this point for the deciduous teeth, the space does not open sufficiently for the erupting permanent canine.

Loss of the deciduous molar permits the permanent molar to drift forward, which often results in impaction of the premolar when it attempts to erupt, and often is responsible for abnormal mesio-distal relations of the affected side of the arches.

An hypothesis has been assumed by Dewey, which is, in effect: "Given the loss of one or more particular deciduous teeth, it is quite possible to prognose and describe the resulting malocclusion which will arise in the following permanent set of teeth."

The loss of the first permanent molar at any age does infinite damage to the occlusion of teeth. It makes no difference whether the upper and lower molars are lost on the same side, or on opposite sides, or whether one or all of them are lost, the malocclusion will result and will be very much in evidence.

Where teeth are lost early on one side and not on the other, many times facial balance is disturbed on account of abnormal development of the buccinator or massiter muscles, on the side where masticating is done, and a marked lack of development on the side which has been unable to perform its share of the masticating function.

I have frequently heard the statement made that orthodontia bands cause decay. Some years ago it was the practice of some operators to closely adapt bands to the teeth without cementing them. These did cause decay, but observation has proven a well-fitted band, cemented with a high-grade cement, does not cause decay.

The possibilities of the prevention of malocclusion are tremendous. In the general practitioner's hands is placed the care of many young children during this transition, which takes place when the deciduous teeth are replaced by the permanent set, and he should equip himself in such a way as to be able to distinguish abnormal from normal development at this critical period, and thereby prevent the development of many a hideous malocclusion and deformity.

Preventive medicine, or a still better and broader term—health conservation, is the modern idea among practitioners of medicine, as it should also be among orthodontists, and the sooner general practitioners of dental surgery become alert to this idea (instead of depending upon the tedious process of correcting these fully developed abnormalities), just in proportion will dental science develop to a higher state of efficiency in this branch of our work.

Our dental schools should give a more thorough training in the diagnosis of malocclusion and development of teeth and dental arches in relation to

the face, and the general practitioner should be more conversant with the subject.

The greatest need of the day is more knowledge concerning the etiology of malocclusion not only by the general practitioner, but by the great mass of laymen who of late years have been educated mainly through the public press propaganda, to the necessity of clean teeth, pure drinking water, sanitary sewerage, hygienic living quarters, "swatting the fly," "fletcherizing," and other modern advances in health conservation.

It remains for the orthodontist to preach the crying needs of the cause and cure, that the people throughout our land may know the benefits to be derived from modern orthodontia.

I caution you, however, do not trust the newspaper reporter to write up the article for publication, for he is always after the sensational and garbles and misrepresents the facts ridiculously to make a story.

If the orthodontist's code of ethics are the same and as hide-bound as those applying to the general practitioner of dental surgery, and if the orthodontic specialist is not permitted personally to exploit the benefits of his science in the public press, why not each local, state and national orthodontia society have a press bureau composed of one or more members who can and will furnish the press copy for an authentic educational article telling the lay-reader the great benefits to be derived from this humanitarian science?

I have often thought that the practitioners of this art—architects of the human face—with their wonderful mechanical and surgical skill are doing more for the health, beauty and happiness of the human race than are the practitioners of any other branch of surgery.

REPORT OF THREE ORTHODONTIA CASES.*

BY W. G. BARR, D.D.S., WICHITA, KANSAS.

Case A.

Patient—Lady, age nineteen years.

Class I Case—Upper central incisors separated three millimeters. (Fig. A-1.)

Cause—Abnormal frenum labium.

The frenum labium is attached to the upper lip at the median line and extends downward, when normal nearly to the festoon of the gums between the central incisors. When abnormal, it extends between and to the lingual

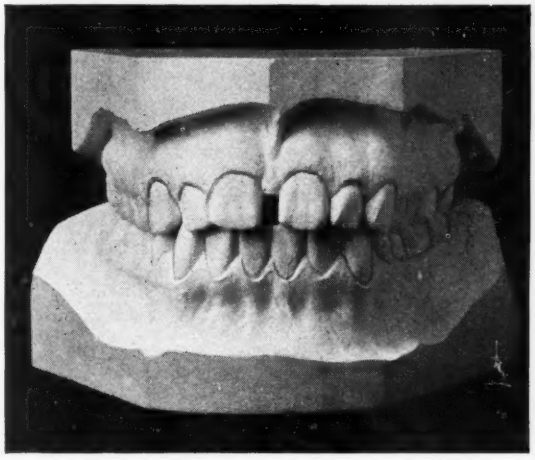

Fig. A-1.—Case with abnormal frenum labium before treatment.

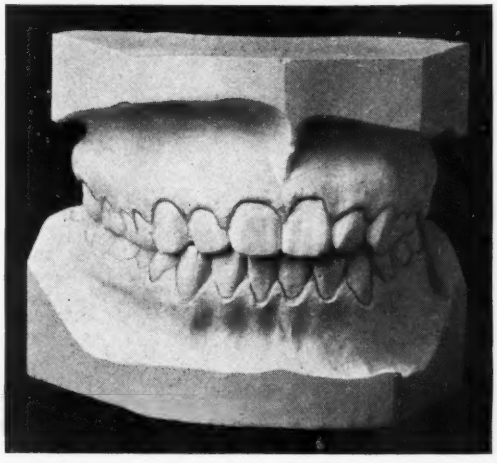

Fig. A-2.—Result of operation and treatment of case shown in Fig. A-1.

side, where it is attached to a groove or depression just forward of the anterior palatine foramen, separating these teeth to a greater of less degree according to its size. If the frenum is the cause of this separation, it may be diagnosed by lifting the upper lip and drawing from side to side. If attached abnormally, the frenum will be seen to pull between the central incisors.

*Read before the Oklahoma State Dental Association, Oklahoma City, April, 1914.

Treatment—Plain bands were made for the centrals, with bars attached to the labial side of the bands, parallel to the axes of the teeth, extending five millimeters above the gingival margin of the gum. This makes it possible to move the apex of the tooth with the crown. About three months time was required to move the teeth to their normal position. The abnormal frenum labium was then dissected out and retainers were placed on the centrals for six months. (Fig. A-2.)

Fig. B-3.—Front and side view of patient suffering from malocclusion shown in Fig. B-5.

Fig. B-4.—Showing patient after the treatment of malocclusion.

Case B.

Patient—Lady, age seventeen years.

Class II Case—The lower arch distal to normal. Upper central and lateral incisors protruding. (Fig. B-3.) The effect upon the face was most unfortunate, giving a very weak expression from the nose downward. (Fig. B-3.)

The effect of this treatment upon the face was most marked: but only what was expected by those who understand the laws of occlusion and occluso-facial balance.

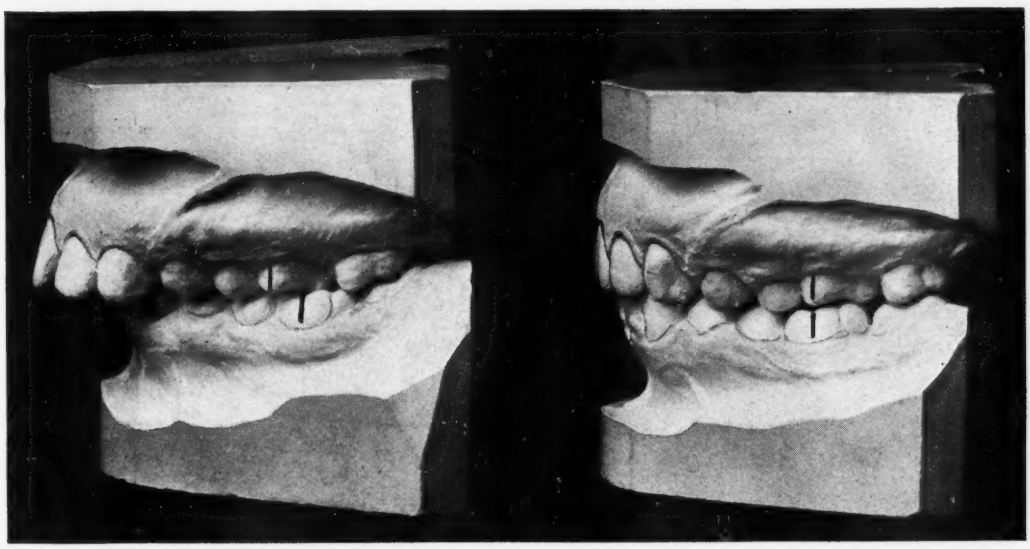

Fig. B-5. Fig. B-6.

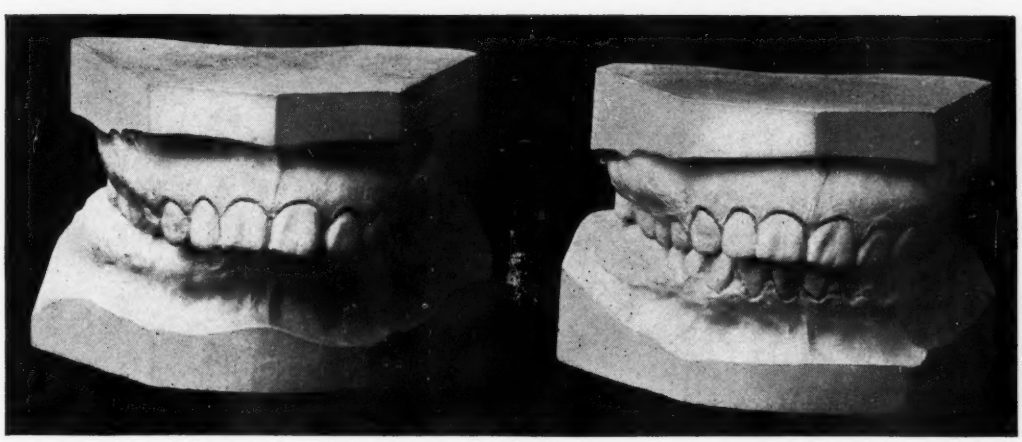

Fig. B-5. Fig. B-6.

Fig. B-5.—Class II, Division 1, caused by mouth-breathing.
Fig. B-6.—Result of treatment of Class II, Division 1 case shown in Fig. B-5.

Notice increased strength of the mouth and chin—the apparently improved mental poise. (Fig. B-4.)

History—Mouth-breather; adenoids removed about two years before coming to me for treatment.

Treatment—Molar clamp bands were placed on the upper and lower

first molars and arches were then adjusted. Hooks were placed on the upper arch opposite the cuspids for attaching the intermaxillary rubbers. After the patient had become accustomed to wearing the appliance, intermaxillary force was then applied to move the teeth. It required nine months to move these teeth into normal relation. (Fig. B-6.) Retainers were then put on in place of the appliance and the teeth retained with intermaxillary force for about seven months. I consider Class II cases the easiest type of malocclusion to treat.

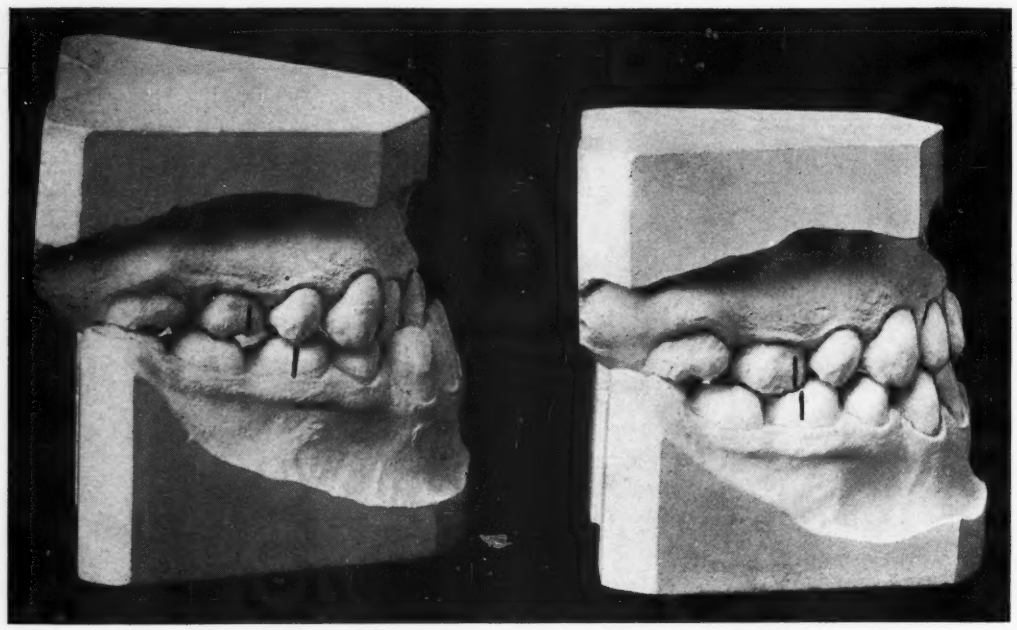

Fig. C-5. Fig. C-6

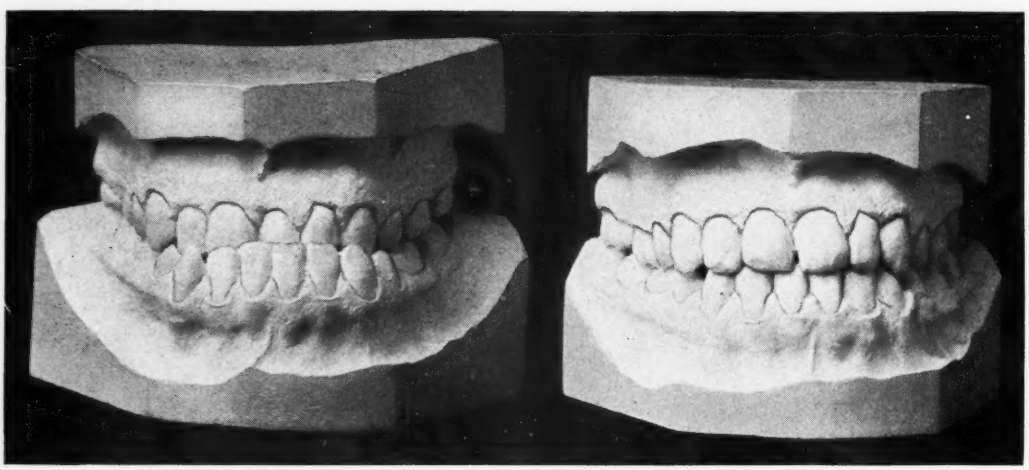

Fig. C-5. Fig. C-6.

Fig. C-5.—Class III case before treatment, complicated by the loss of premolars.
Fig. C-6.—Class III case after treatment.

Case C.

Patient—Lady, eighteen years.

Class III Case—The lower arch mesial to normal. The effect of this class of malocclusion upon the face is very marked. (Fig. C-5.)

Treatment—The second bicuspids, right and left, upper and lower, were missing. No history of their extraction. The missing teeth being equal on both sides made but little difference in treatment. The appliance consisted of molar clamp bands and expansion arches placed in the mouth in the usual manner. Hooks were placed on the lower arch opposite the cuspids for attaching the intermaxillary rubbers. It required about eight months time to move the teeth. (Fig. C-6.) Retainers were then adjusted and left on for six months.

SOME EARLY AND HYGIENIC REASONS FOR MALOCCLUSIONS.

BY GRAFTON MUNROE, A.B., A.M., D.D.S.,
SPRINGFIELD, ILL.

THE origin and source of oral deformities can easily be traced back to life in its earliest phases. Much of it is prenatal and is often handed down from the parent, traits of deviations from the normal in one parent or the other being passed on to the child.

Missing teeth are among the frequent inheritance from parents to children. I have several cases that show this form of deformity. Too little stress is placed these days upon the importance that the mother-to-be should give to laws of hygiene, proper food and exercise, and then, too, the maternal powers of assimilation and digestion are not made matters of careful thought.

The nursing mother is not as fashionable as she should be and the dear baby is passed on to the bottle, to thrive (?) perhaps on some artificial food and await all the train of co-incidences that often attend the eruption of the first tooth and teeth.

Oral deformities often start, though not always, if the child has a good heritage, in the lack of exercise it should have while nursing at the mother's breast. See the dear baby nursing, how he earns his daily bread by the sweat of his brow. All the muscles of the throat and all the masticatory muscles, the stimulus extending up into the head, are brought into play, and even his circulation is all aglow as he reddens in the face and finally falls away to sleep the natural sleep of the healthy infant with mouth tight shut and nasal breathing in full force. But let this natural function be perverted or his nasal breathing impaired, there is sure to follow some, if not many of the deformities that are directly traceable to improper breathing.

This mouth-breathing changes the positions of the muscles of the cheek and face and brings force to bear on the bony tissue of the cranium—I say cranium because the whole head is affected in some part or degree. Immediately the question might be asked what produces this perverted breathing. I have cited one of the earliest causes, viz.; unnatural feeding. If there is unnatural feeding, then malnutrition in some form is likely to follow in a greater or less degree. In a greater degree if the mother's gestation period has been passed with all sorts of irregular habits and high living.

If the baby has an early start in colds and catarrhal conditions, then the nasal and respiratory tract is likely to be full of germs and inflammatory processes will set in, and the early appearance of adenoids and enlarged tonsils will force a continuance of the now established mouth-breathing. In mouth-breathing we have therefore the most potent cause for adenoids and tonsil enlargement, and the consequent greater or less deformity of the oral cavity, especially as pertains to the teeth. Might I say, then, that the trained nurse should make it her business to see that the infant should get as good a start as possible by urging the mothers to feed the dear little ones in the most natural way and do all they can before its advent into the period of dentition, when there often are so many ailments that besets the progress of the child.

Too many parents pay such little attention to an early visit to the dentist with the child, thinking the deciduous teeth will be shed and hence need no attention. The temporary or deciduous teeth should receive care as early as the fourth year and parents that take children thus early are only giving them rightful attention. Temporary teeth should not ache any more than permanent ones. They can be handled and treated so the child need have but little pain, unless there has been too serious delay.

The spacing of the child's teeth is a fine sign of proper development and when this does not occur, especially at the front, there is sure to be some crowded condition of the permanent ones.

In addition to the different causes which I have enumerated likely to produce irregularities or deformities of the mouth, a most potent one must be mentioned, namely *habit.* The fact that we are all so often found to be creatures of habit, makes the demand for watchfulness over the more pernicious ones a necessity, for early correction of a baneful habit is not so difficult, but a well-established habit may become unbreakable.

Mouth-breathing may be remedied by proper attention to the nose and throat.

Thumb-sucking is pernicious in its results, producing high vault and narrow arches.

Lip-biting may seem an insignificant act, but persisted in it has proved to be fruitful in producing protruding upper teeth and greatly adds to the difficulty of correcting this form of malocclusion or deformity.

These habits are so often unconsciously performed by the victims of them, that patients will often tell that they do not exist and in an unguarded moment they will be seen in the very act.

Such is often the case with nail-biting, the evil results of which are so plainly evidenced by ill-shaped fingers and almost unsightly hands, for pretty fingers mean so much to the hands.

Cheek-sucking is just as powerful an agent in misplacing the teeth as many other habits; often changing the normal occlusion by throwing the teeth towards the tongue and thus out of line. If these habits can be brought into play during conscious moments and observance of them noted by both parent and victim, if the child is old enough, then suggestions like the opposite habits will greatly aid in the breaking of the unseemly ones. For instance, those who have the habit of sucking should be taught to blow outward, and as those who have habits of the before-mentioned kind often indulge in them secretly they should be encouraged to seek active sports and games that keep them busy, and above all kindly suggestions, and stimulation of children to have as nice appearance as others more favored, is likely to produce results that will make them greatly ambitious.

THE ADJUSTMENT OF REGULATING APPLIANCES.

BY T. G. DUCKWORTH, D.D.S.,
SAN ANTONIO, TEXAS.

IN THE adjustment of regulating appliances, it has been found that a great deal of care must be exercised in order to eliminate as much soreness of the tissues as possible. At the beginning of a long and tedious operation, of course, we cannot eliminate it entirely, but it can be reduced to the minimum by the way the appliances are adjusted to the teeth, and for this reason I have laid down some principles which can be applied in most all cases to an advantage, both to the patient and operator. Not only does the good will of the patient depend upon the proper adjustment of regulating appliances, but the arch and band must be so adjusted as to take advantage of the force applied. The method I pursue does not pertain to any particular make of appliances, but is adapted to any of the appliances composed of the expansion arch and clamp bands.

After the impressions have been taken and the models made a No. 6 wire ligature is passed through the approximal spaces on either side of the anchor teeth and twisted around the contact points until the patient says that they are comfortably tight. The patient is then dismissed for from one to three days in which time the wires insure sufficient separation of the teeth that the clamp bands or special made bands can be cemented on with very little inconvenience to the patient. Measurements for special bands are taken at this time and are made and ready to be cemented into place on the next visit of the patient.

At the time of the second visit of the patient, the special bands which have been made during the interval between the first and second appointments, together with their various attachments, are cemented to the teeth, both the upper and lower arches. By the use of the models select the size of the clamp bands, contour with pliers, bend the arch using the models as a guide, then place the clamp bands on the arch and after removing the wires from around the contact points, place the bands and arch on at the same time, using the arch as a means in securing the alignment. The lateral spring is taken out of the arch at the time of adjustment. The upper appliances are adjusted first, and as soon as the patient becomes accustomed to the upper appliances the lower are adjusted in like manner. This prevents both jaws being sore at the same time and as we cannot prevent the tissues rubbing upon the arches they will in most cases produce some inflammation.

After the clamp bands have been cemented to place and the arch bent to conform to the curve of the dental arch and lying in close proximity to the teeth, ligate with silk ligature to about four anterior teeth, and the patient is dismissed for three to four days.

The lateral spring in the arch is gradually increased until the desired movement of the teeth is secured. The amount of force applied with any form of appliance is varied, and is in direct keeping with the age, amount of stimulation desired, interference, etc. This must be governed by the

operator. Gentle pressure constantly applied in tooth movement is much to be desired over pronounced force, as the movement is accomplished more easily, more satisfactorily, and with better results.

The proper adjustment of regulating appliances is not the solution to regulating, but the appearance and ease with which a child can wear them means a great deal as far as results are concerned. A discouraged child as the result of a bad beginning, wil soon win the sympathy of its parents, as it would occur to the parents that several months treatment under similar conditions would injure the child's health—and your work would be at an end with nothing accomplished.

SOME POINTS OF INTEREST ON ORTHODONTIA.*

BY J. W. RAWLINGS, D.D.S., TACOMA, WASH.

IN PRESENTING a paper for your consideration, I have divided my subject into three parts, namely: (1) A few general remarks on orthodontia; (2) Etiology of malocclusion; and (3) Diagnosis of malocclusion.

Under the heading of general remarks I want to correct the error that many practitioners have fallen into in regard to the time of commencing the correction of malocclusion. It was formerly taught that the treatment should not be attempted until the twelfth to fourteenth year, about the time that the permanent teeth are all erupted; so there is very good reason why so many practitioners have advised and are continuing to advise their patients to wait until the cuspid, at least, is erupted. The fallacy of this advice, I think, is readily seen when one grasps the fact that when malocclusion once starts, it will continue to grow in proportion to the abnormal forces that are active in bringing about malocclusion. Angle very nicely puts it by stating that these forces tend toward maintenance of the normal if normal, or toward the increase of inharmony or abnormal if abnormal. Therefore, it is obvious to us that the rational time for the treatment of malocclusion is just as quickly as the same is observed. By correcting a very simple malocclusion and getting the situation back to the normal, the same, if not interfered with, would continue to develop in the abnormal, which in many instances would develop very complicated malocclusions, being difficult of correction.

It is very difficult to discuss normality or abnormality without a point to start from. Angle very wisely stated that the basis of orthodontia is normal occlusion; so in all orthodontic treatment, normal occlusion is the ultimate goal and is the end we are constantly striving for.

Normal occlusion is defined as the normal relation of the inclined planes of the teeth when the jaws are closed. We cannot think of occlusion without thinking of the forces of occlusion. There are six forces of occlusion and these forces must be present if the teeth are to remain in normal occlusion. The loss of any one of these forces will cause drifting of the teeth and result in malocclusion. The six forces of occlusion are as follows:

1. Normal cell metabolism.
2. Muscular pressure.
3. Atmospheric pressure.
4. Harmony in size of the arches.
5. Force of the approximal contact points.
6. Force of the inclined planes.

I will say by way of explanation that the "Forces of Occlusion" and the second part of my paper—"Etiology of Malocclusion"—are so intimately related that we cannot discuss one without encroaching upon the other, so in discussing forces of occlusion I will naturally drift into etiology of malocclusion.

The forces of occlusion are those which influence the development,

*Read before the Pierce County Dental Society, March, 1913.

eruption, and position of the teeth as well as the harmony or inharmony of the jaws themselves. With a proper distribution of these forces, the teeth are forced to occupy and retain their normal position, but in the event there is unequal distribution of the forces, the whole tendency is toward the abnormal.

The jaws of a child at birth in a large percentage of cases, unless there has been congenital disturbances, bear a proper relation to each other and also to the face and to the head. There being nothing to interfere with the development of the temporary teeth, they usually erupt in their proper positions and assist beauty and harmony of the face. The first permanent molar develops independently of any other teeth and, being guided by the temporary teeth, is the most constant tooth in both time of eruption and position of any of the permanent teeth. Normal development and normal occlusion depend so much on this tooth, I wish to dwell for a moment upon it. It is the largest of the permanent teeth, most firmly attached and a powerful factor in mastication, probably more highly specialized, and, with its long, prominent cusp, when, locked with its fellow on the opposite jaw, determines the relationship of the jaws to each other. By its early eruption it takes up the burden of mastication just when the absorption of the roots of the temporary teeth are taking place and the time in which the child is in need of masticatory surfaces. It is the pillar around which the permanent teeth are erupted. The teeth not only influence the approximating ones in the same jaw but one jaw has a very marked influence in moulding the other. We know that the lower teeth precede the upper in eruption and if the incisors and first permanent molars are normal and there has been no mutilation, all will be well. If one of the incisors erupts, however, in labial or lingual occlusion, we have malocclusion established and as a result of the muscular pressure of the tongue or lips all possibility of self-correction is dismissed. With the wedging force of the teeth destroyed by loss of normal contact points one of the forces of occlusion is lost which in turn becomes one of the forces of malocclusion. A condition of this kind becomes worse and, as a result of the abnormal forces, the upper teeth when erupted are compelled to conform to the lower teeth, thereby bringing about abnormal occlusion of the teeth of both jaws. I think you can readily appreciate the absurdity of waiting for the eruption of the permanent teeth, for it is very essential to have a full complement of teeth, normally occluded, to have harmony and balance of facial features. Therefore, I cannot emphasize too strongly that the younger the patient the less abnormal the malocclusion and the more certain and ideal the results. I wish to enumerate briefly many of the forces which bring about malocclusion, namely: Too early extraction of the deciduous teeth; abnormal muscular pressure; thumb sucking; enlarged tonsils; obstructed nasal passages, and loss of the permanent teeth. Angle teaches that extraction of the permanent teeth is never justifiable. This is the position of the present day orthodontist and I will say to you as general practitioners that there is a rule that is axiomatic, that if extraction is resorted to, it must never be a cuspid or first molar; if, however, from incurable abscess, and we find it necessary to resort to extraction, the space should be restored by a piece of bridgework before the teeth have drifted forward, thereby breaking up normal occlusion.

This brings us to the third part of the discussion—diagnosis of malocclusion. I doubt if you as general practitioners are greatly interested in diagnosis, but as a matter of general information I thought I would briefly go over the classification which is generally adopted. Angle, as you probably know, has classified malocclusion according to the mesio-distal relationship of the arches as indicated by the relation of the lower first molars to the upper first molars (the key to occlusion), and the position of the individual teeth.

The individual teeth may occupy any one of the seven positions of malocclusion with the line of occlusion. The classes of malocclusion are Class I, II and III, with their divisions and subdivisions.

Class I is characterized by a normal mesio-distal relationship of the arches, the first molars locking normally mesio-distally if they have not been interfered with, but the teeth anterior to the molars may be in any one of the seven positions of malocclusion. The seven positions of malocclusion are mesial, distal, labial, lingual, supra,- infra-, and torsi-occlusion. The most frequent cause of this class of malocclusion is the lack of development of the jaws. The greater percentage of our cases develop into this class.

In Class II there is an abnormal relationship of the arches, the lower arch occluding distal to the upper. The complication of distal occlusion is the determining characteristic of this class of which there are two divisions, each having a subdivision.

The differences manifested in the two divisions is the position of the upper incisor teeth—one with protruding incisors and the other with retruding incisors. The most frequent cause of this class is enlarged pharyngeal tonsil with the accompanying evils of mouth-breathing, abnormal muscular pressure, etc.

Class III is characterized by a mesial relation of the lower arch, the first molars occluding mesial to normal. This is the most infrequent class met with and, as orthodontists, we feel that it is most fortunate that so few of these cases occur, for it is the most difficult of treatment and if ideal results are obtained the patient must be seen early—after the age of seventeen or eighteen years you can get improvement by treatment but not always perfect results.

CURRENT ORTHODONTIC LITERATURE.

EDITED BY H. C. POLLOCK, D.D.S.

Oral Sepsis of Dental Origin (Medical and Surgical Aspects). By William H. Haskin, M. D., F. A. C. S., New York. (New York Medical Journal, May 16, 1914.)

On January 17, 1914, the author read before the eastern section of the American Rhinological, Laryngological, and Otological Society one of two papers on Some Gateways of Cryptogenic Infection, taking the Infection of the Alveolar Process as his subject.

"In 1912, the writer presented a paper before this section on The Relief of the Nasal Obstruction by Orthodontia; A Plea for Early Recognition and Correction of Faulty Maxillary Development. This paper pointed out the tremendous influence that development of the teeth has upon the general system and urged the necessity of proper and sufficient mastication as probably the most necessary factor in securing maxillary development.

"The effect of the premature loss of both deciduous and permanent teeth was also described as affecting proper development, but such loss of teeth causes another train of conditions which do not develop until much later. In order to be able to masticate food perfectly, all teeth should be in normal occlusion, the one to the other, so that each of the one hundred and thirty odd planes of the teeth is in proper approximation. The ideal condition is almost never found among civilized people owing, first, to faulty development with consequent irregularities in position; and second, to caries, the latter necessitating fillings, crowns, and bridges with all their evil consequences, including extractions. How many of you have ever carefully examined the occlusion of your patient's teeth, in order to determine whether or not it is possible for them to masticate properly? It will be most interesting to you to examine fillings, crowns, and bridges to see how often any attempt has been made to reproduce the various cusps and clefts which should be present if the food is to be ground or torn up as nature intended that it should be, and the teeth not forced out of position, but we have entirely neglected this most important factor in health and as a result of our neglect the dentists have been allowed full sway and their mechanical ingenuity has produced marvellously disastrous results.

"However, 'murder will out' and there is now an earnest effort on the part of the leading dental men (men who are thoroughly scientific and who fully understand that the discredit must necessarily reflect upon their profession as a whole) to overcome this great evil. Our profession has been largely to blame for the present state of oral sepsis because of our ignorance as to existing conditions through lack of definite knowledge of the teeth which form the gateway of the body. This is not surprising when we realize that doctors themselves are most negligent of their own mouths and carry most offensive and unsanitary conditions constantly with them. This fact is well known to the dental profession and is a disgrace to our own profession.

Purulent diseases of the jaws always attack first the membrane lining of the teeth sockets, and must start either at the gum margin or at the apex of the root, spreading from an inflamed pulp; unless perhaps the infection is carried through a false opening of the root or pulp chamber by the dentist or by a fracture."

The author then gives the history of case after case in which the desired results have been obtained after the oral cavity has been placed in a normal, healthy condition. He urges that more attention be paid to these oral pyogenic conditions which are causing so much disease, and which have until of late been overlooked by the medical profession.

Dental Alopecia.

As the science of orthodontia gradually extends its field we are constantly reminded of time honored maladies (so old that they are not able even to enjoy a modern nomenclature which science so aptly bestows upon each and every disorder know to the *species homo*) of which it is said that orthodontia is either directly or indirectly responsible. We have met face to face neurestheníia, trifacial neuralgia, peritonitis (as a result of zinc salts), and in fact most every disorder in which the etiology has seemed obscure to the practitioner in charge. Fortunately, in the past, of these charges laid at our door we have been able to exonerate ourselves. Now once more it is to buckle on the girdle, for we must meet "Dental Alopecia," to quote (Münchener Medizinische Wochenschrift, July 28, 1914).

"Owing to the common embryonal origin of the cutaneous appendages and the teeth, it does not surprise us to find them involved together in congenital malformations. The dentition may be defective in congenital absence of hair, and when the latter is very redundant, as in certain cases of familial hypertrichosis (dogfaced men), there may be very notable dental defects suggesting compensation. Attention has often been called to the coincidence of early baldness and early caries, and some years ago an attempt was made to isolate a distinct affection of the two systems under the name of Jacquet's disease. At a discussion last June on hair anomalies before the biological section of the Aerztlicher Verein of Hamburg, the condition 'alopecie dentaire' was mentioned by two of the members. Plaut as a result of his own experience was inclined to hold the teeth responsible for the production of certain cases of alopecia areata. Very convincing was the fact that when springs were worn to correct the position of the teeth, baldness in spots often appeared, the hair growing in after the removal of the spring."

Cast Regulating Appliances. By O. Solbrig, D. D. S., Paris. (Die Oster.-Ungar. Vierteljahrsschrift für Zahnheilkunde.)

The advantages of casting orthodontic appliances are: (1) The appliances are made out of the mouth on a plaster model, thus saving time and pain to the patient, which is of great importance when we have to deal with little children, and (2) Time may be saved by having the mechanical technique executed by a skilled laboratory mechanic.

As in other castings these appliances are modelled in wax and cast in the usual manner. In this way not only can all kinds of modifications be

obtained but they will be equipped with the required strength which is sometimes wanting in narrow bands. As the weakest part of a band is that part adapted between the teeth, this part is made of a stiff twenty per cent iridio-platinum which can be so thin that separation of the teeth is unnecessary. The greatest possible accuracy is obtained in all bands.

As no D-bands are used the accumulation of debris between the screw shaft and the tooth is avoided and white decay on these places is thus prevented. It is for this reason that all the bands should cover the tooth to the gum margin or have a space of sufficient area to be easily cleaned. As there are only smooth surfaces upon these appliances they satisfy all demands of hygiene.

Experience has taught us that single teeth for anchorage lack the necessary stability and are easily tipped. The author therefore always advises the uniting of several teeth for this purpose, which with this method does not occasion any supplementary work.

In cases of Classes II and III we can cover the biting surface of the molars and establish a smooth surface in such a way as to prevent the interlocking of the cusps being a hindrance during the treatment; but where it is important to maintain the existing normal occlusion, the biting surface can be left free.

Although these appliances are all made out of precious metals, we may consider them as most economical, as the gold can easily be remelted.

The appliances are cemented on the teeth, and may be used in conjunction with other methods—Angle's, Ainsworth's, Jackson's, etc.

The method has no pretention of being universal, and it recognizes all the good features of all other appliances; but it has many advantages, which will, the author hopes, make it a useful appliance that every practitioner will welcome in his practice.

Only a few words are necessary to describe its manufacture. At the first visit, plaster impressions are taken, but previously we put a iridio-platinum matrix between those teeth which are to carry the appliances. These matrices are left in the impression and then remain on the model. On this model we study the case and manufacture the appliance. Bands and caps, with hooks and tubes, etc., are modelled on in wax and cast in the usual way.

At the second visit, we can take new impressions to keep for our collection, and then the appliance can be set in the mouth.

Mouth Infection as a Source of Systemic Disease.—By C. H. Mayo, M.D., Rochester, Minnesota. Read before the Section of Stomatology, American Medical Association, Atlantic City, N. J., June 24, 1914, in a symposium on Mouth Infection. (Journal of the American Medical Association, Dec. 5, 1914.)

"It has taken a long time for the general public to appreciate the full role of infection in the production of death, while even in the medical profession, more has come from the study of infections in the prevention of disease than increasing the means of cure of disease, great as have been the results of treatment.

"Since all animal life depends on some other form of cell life, vegetable or animal, it seems but the part of all life to carry on this process of germinative development and maturity. It is only the resistance of healthy cells that prevents the inroads of the myriads of ever-present bacteria and animal parasites which are striving to get a foothold that they may in turn carry on their life work. Disease, then, is an inflammatory process from infection and the efforts at repair. It may also be chronic from the failure of cell life through lack of defense, from defective nutrition and advancing age.

"We still speak more or less lightly of the so-called diseases of childhood, and the time is not far past when mothers took their children to be exposed to whooping cough, mumps, etc. Today the intelligent woman knows that it is not necessary that the vitality of the child should be jeopardized by such preventable diseases, and that when they occur it is through carelessness, neglect or ignorance on the part of some one.

"A comparatively small number of infections occur through wounds of the cutaneous surface. Many of those affecting the special organs are incurred through direct or indirect contact, as those of the eye and of the genito-urinary system. They may make most serious inroads on the general health. Infections which produce the greatest number of diseases enter the system by way of the alimentary and respiratory tracts. Somewhere in the line, then, of the alimentary and respiratory tracts, and in the excretory ducts of the body lie the sources of the entrance of organisms which terminate life in the majority of instances. The great importance of the well-known diseases of the nasal passages with their sinuses, the lymphoid tissue of the pharynx, including the tonsils, and the diseases of gums and teeth, which have been given prominence by the dental profession during the last three years, is now more generally appreciated.

"The mouth is the harbor of many varieties of bacteria which are constantly taken into the stomach during the process of eating. We have long looked on the acids of the stomach as destructive to such bacteria, but Smithies, in a microscopic examination of gastric extracts from 2,406 different individuals with 'stomach complaint' (dyspepsia, indigestion and the like), showed that irrespective of the degree of acidity of such gastric extracts, bacteria were present in 87 per cent. Morphologically cocci and diplococci were present in 83 per cent; short and long rods (often of the colon group) in 58 per cent; typical streptococci and staphylococci in 17 per cent, and *Leptothrix buccalis* in 24 per cent. In fifty-four cultural studies of saliva from 'dyspeptic' patients, streptococci and staphylococci were demonstrated in over 80 per cent, bacilli in 66 per cent and *Leptothrix buccalis* in more than 14 per cent. Comparing these figures, it would appear that the common forms of pus-producing organisms (streptococci and staphylococci) have their proliferation retarded in gastric juice, but that bacilli (often of the colon group) as well as *Leptothrix buccalis* thrive in the stomach.

"Bacteria of various forms live in the small intestine, or at least pass through it or into the blood stream by way of the mucous membrane. They exist in such great numbers in the large bowel that, whether living or dead, they constitute a considerable part of the dejecta. During the last few years some important points have been added to our knowledge of bacteria. Living

germ life in the blood, or bacteremia, occurs in all infectious diseases. According to their number and virulence, the blood responds in slight or extreme degree to the symptoms, general and local, constituting the disease.

"We have long known that bacteria were specified in type and action in all diseases in which we have been able to identify a specific germ. Rosenow has done a great work in showing that changes in environment may so change bacteria that specific action varies. The appearance of the bacteria is also unlike that of the original cell. In the blood stream these various forms, once they enter it, are selective in choosing their location, thereby developing specific local disease. The old 'idiopathic' osteomyelitis of the child we now know may follow a short time after a specific tonsilitis. Pyorrhea, tonsilitis or sinus disease may be the source of an infection which we call rheumatism. Root abscesses and pus pockets connecting with them are often the source of acute and chronic rheumatism. The nasal sinuses and chronic mouth and throat infections develop anaphylaxis from the constant poisoning, and their results are shown in hay fevers, asthmas, urticarias, etc. Rosenow's work is going far to show that ulcerations of the stomach are conditions in which the mucosa is attacked from behind through the blood stream by bacteria which live in the blood and have a selective affinity for these particular areas. Septic bile which, in the majority of instances, is caused by infection is carried to the liver through the portal circulation. It creates such changes in the bile that it fails to activate the pancreatic and duodenal secretation, thus making various phases of indigestion, with qualitative rather than quantitative food trouble. Lower down we have the appendix with its lymphoid tissue which approximates in character that of the tonsil. Here the acid types of bacteria have the same opportunity, could they but enter the blood stream, of making erosions of the gastric mucosa as the specific form which is found in the mouth. We may here note that acid-secreting or acid-bathed surfaces are very subject to cancerous change, while alkaline-bathed surfaces are much less liable to be involved. Saliva is neutral or slightly alkaline in health, yet less than 20 per cent of people have healthy mouths. The infected mouth shows a tendency to the acid reaction and it is through this acid change that we have an additional danger in cell degeneration, of malignant type, from chronic irritation.

"The stomach is the most common location of all cancers, while the alkaline small intestine is rarely subject to cancer and the duodenum is most resistant to it. The large bowel again reverts to an acid reaction and is very subject to cancer. So also is the bladder. These structures with acid secretions are of more recent development than are many tissues of animal life, several of them being classes as organs of convenience, which fact renders them possibly less resistant.

"Certainly enough is known concerning infections and their mode of entrance, that the infected and diseased mouth and respiratory tract must be looked on as most serious menaces. Much may be done by more general and effective school inspection. The present generation of children will understand and demand protection for their children in time. The first teeth should be watched, that the second be not permitted to erupt irregularly, causing deformities. Jaws should be spread that the teeth may meet, and the high arched palate, diminished nasal breathing, thereby reduced. Ton-

sils and adenoids should be looked after, thus preventing ear and mastoid diseases, rheumatism, endocarditis, etc. In chronic and recurring diseases, a search must be made to establish positively the non-participation of each of the several sources of infection.

"The physicians engaged in this line of observation require fully as much training in the rudiments of dentistry as the dentist does in the signs of infectious diseases. While we have leaders in all professions, through the energy of their kinetic glands, the big stick which leads to our advancement is in the hands of the progressive and educated public who are constantly demanding more of their dentists, of the medical profession, and of the State in protecting them against preventable diseases."

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EDITORIALS

The Editorial Policy of The Journal.

IN assuming the editorship of the International Journal of Orthodontia, I fully realize the responsibilities. The success of this undertaking will depend upon the ability of the publishers to produce a high-class journal and give it wide circulation, and upon the editor and his staff to secure for publication each month meritorious contributions on timely subjects of interest to those engaged in the practice of orthodontia, dentistry and its allied specialties.

Of course, our readers and contributors will be interested in knowing something of our policy. Briefly, we want to state that the Journal will be conducted for the benefit of orthodontia as a science and as a specialty. To this end we will strive to publish articles that will be of interest to the entire orthodontic fraternity. We will endeavor to secure contributions of merit from workers in the field of orthodontia and its closely allied specialties, regardless of "race, color, or previous conditions of servitude."

It is our intention when publishing articles dealing with appliances and methods of treatment to describe only such appliances and those forms of treatment that have proven their worth in the hands of responsible practitioners.

On account of the diversity of opinion with reference to "nomenclature,"

articles will be published with whatever form of nomenclature the writer desires to use, but such use does not imply that the editor agrees with the views of the author.

The pages of the Journal will always be open for the discussion, in a scientific manner, of disputed points in orthodontia.

It shall be our constant endeavor to secure original contributions on subjects of interest to our readers and the proceedings of those societies that in our opinion can best be served by publication in this Journal.

We hope through this policy to serve at all times the greatest number and to help make orthodontia the science we have long hoped it would be.

—*M. D.*

The Journal's Endeavor.

SERVICE is man's greatest gift to society, and in proportion to the service which we render to our fellow-man, is our value to the world. The purpose of the International Journal of Orthodontia will be to serve humanity, and this service will be rendered to the very best of our ability. Efficiency is the cry of the twentieth century. How to make two blades of grass grow today where only one grew yesterday, is the constant endeavor of our most thoughtful men. How to overcome mouth and jaw defects in the child and thus assist in developing more efficient manhood and womanhood is the purpose of the orthodontist. To aid in this shall ever be the purpose of this Journal.

It is just as much a crime to allow children to grow to maturity with malocclusions to handicap them in life's work, as it is to allow their chances in life's battles to be lessened by such deformities as cross-eyes, cleft-palate, hare-lip or club-feet.

Preventive medicine is the slogan today of scientific medicine. To cut down the waste occasioned by disease is the endeavor of our great medical universities, backed by endowments of millions of dollars, the gift of the state or philanthropic individuals. Lengthen the human span and increase man's physical ability to cope with the natural handicaps. To this laudable purpose we subscribe heartily and join with it in an endeavor to start the young on life's journey with teeth in normal occlusion, thus enabling them to properly breathe and masticate their food.

Dentistry is the hand-maiden to medicine. Proper care bestowed upon the mouth and teeth increases the resistance to bacterial invasion, thus becoming one of the most effective methods in preventing disease.

The International Journal of Orthodontia will endeavor to serve society by arousing interest in this much-needed and fascinating branch of science. It offers its pages to workers in this field with the hope that it may benefit humanity, that it may help to increase human efficiency, and that it may become a factor in arousing interest in our child-life to such an extent that malocclusion be given as much attention as is now bestowed by school inspectors upon adenoids, eye-strain and mental defects.

Dr. Edward H. Angle and Orthodontia.

IT is well known that Dr. Edward H. Angle is the nestor of orthodontia. To him, more than to any other individual, is this science indebted. His life has been spent nursing and developing it.

To practically every dentist today throughout the world, orthodontia is synonymous with Dr. Angle's name. Few men have the privilege of living to see the child of their creation in science develop to that degree of efficiency which orthodontia now so rightly enjoys. Most pioneers in the field of science only find the trail; Dr. Angle not only blazed the trail, but he today enjoys the rare pleasure of seeing this pathway trodden by the multitudes who seek information at this shrine.

All those who have had the privilege of intimate acquaintance with Dr. Angle know how jealously he has guarded orthodontia. To keep it out of the hands of the incompetent and thus prevent it being besmirched by faulty results has been his one ambition. To this end he has constantly striven, constantly lifted his voice, and constantly cautioned his students throughout the length and breadth of the land.

The International Journal of Orthodontia in this, its initial number, pays a tribute of respect to the work of this great man. His ideals of service, of thoroughness, of care and attention to detail, perfect results and devotion to one's work, will ever be its motto.

Dr. Charles H. Mayo's Opinion.

IN this issue of the Journal appears an abstract of the paper read by Dr. Charles H. Mayo, of Rochester, Minnesota, before the Section on Stomatology of the American Medical Association at the June meeting in Atlantic City.

In this paper Dr. Mayo makes the statement that in the future more than in the past society is going to demand orthodontic services. Human efficiency, to a great extent, depends upon a well-regulated digestive system, and such a system is dependent upon sound teeth and as nearly perfect occlusion as is possible to obtain. Society is going to wield the "big stick," as Dr. Mayo puts it, to such an extent that orthodontic work will become the necessity of the future.

Dr. Mayo believes that the day is not far distant when orthodontia will become one of the most important specialties of either medicine or dentistry. He looks for great advancement in this science, as a result of which child-life is going to be much benefited.

School inspection is incomplete when malocclusions are not recognized and their correction insisted upon. The orthodontist, who has been fighting for recognition in his work for so many years, should feel elated that so eminent and thoroughly practical a surgeon as Dr. Mayo should espouse his cause and predict for it such a brilliant future.

Emetine and Pyorrhea.

EMETINE as a specific in pyorrhea is creating a mild sensation among the practitioners of dentistry and medicine. Following the announcement of Allen J. Smith at the meeting of the Pennsylvania State Dental Association in Philadelphia last July that this agent had been uniformly successful in his hands, great enthusiasm was aroused over it and sanguine hopes entertained that at last this obstinate disease could be conquered. Bass and Johns of Tulane University have added further experimental work to that of Smith with equally good results.

Emetine undoubtedly will become a valuable therapeutic adjunct in treating this disease. But will it become the panacea claimed for it by its devotees? Of course, it is hoped that such will prove to be the case.

Pyorrhea is a dangerous and subtle disease. Thus far it seems to have resisted all efforts to effect a cure. Hecker, of Kansas City, in his research work at St. Margaret's Hospital, has gotten some brilliant results from the use of autogenous vaccines. His experiments on animals in bringing about artificial pyorrhea are interesting and very instructive.

Autogenous vaccines apparently arrest the disease, clear out the pus pockets and strengthen the tissue against further invasion. The advocates of oral prophylaxis as the on y efficacious form of treatment look askance at the use of vaccine in the treatment of this disease.

It would seem that the price of emetine chloride will prohibit its general use among dental practitioners, but surely some means will be employed to reduce the cost of this drug, should continued investigation prove that it will bring about the results now heralded.

So many specifics have been claimed by enthusiastic workers in the past, only to be discarded when the full light of truth is turned on them, that one is loath to believe in new discoveries until clinical results prove unquestionably what can be done.

It is hoped emetine will do all that is claimed for it by its supporters and we trust future clinical reports will prove it to be the long looked-for remedy with which to treat pyorrhea.

Pyorrhea—Rheumatism—Endocarditis.

IT should be gratifying to the dentist to see the importance that the medical profession is attaching to pyorrhea as an etiological factor in endocarditis and the so-called rheumatic conditions. This interest on the part of the medical profession is sure to result in a closer bond between the dentist and the practitioner of medicine and in this union society will be benefited and much better served. Not long since the internist and the surgeon were at daggers' points. Today this is changed. They work in harmony, one assisting the other, and as a result we have more efficient surgeons and more skillful internists. Society is benefited, disease more skillfully combated and life lengthened by this union.

Rheumatism is a hackneyed word in medicine. It has been the *alpha and omega* to the unskilled. When the practitioner could find no other name to give to the aches and pains arising from a general infection due to pus pockets about the alveolus, he looked wise and said "rheumatism." He would then prescribe salicylates and further add to the discomfort of the patient.

It has been proven by Hecker, in a series of experiments at St. Margaret's Hospital in Kansas City, that pyorrhea was present in every case of rheumatism treated. Treatment for pyorrhea brought relief to the rheumatic sufferer. The well-trained physician of today refers his rheumatic cases to the dentist or specialist for examination and coöperative treatment.

Pyorrhea is a most frequent cause of endocarditis. In the past physicians have been baffled as to the cause of apparently healthy patients dying suddenly with heart failure. Autopsy would show endocarditis. But why endocarditis? In the light of recent investigation many of these cases could be traced to pyorrhea. It is for this reason that you hear on every hand today the warning: "Keep your teeth and gums in a healthy condition." It is for this reason that the internist fears pyorrhea and its consequences as much as he does the deadly cobra.

Noise vs. Silence in the Dentist's Operating Room.

EFFICIENCY engineers recommend that noise be eliminated from workshop and factory. Experiments prove beyond question that men working in a quiet, dignified atmosphere can do more and better work than where their attention is distracted by noise. Violent atmospheric vibrations unquestionably destroy nerve energy. We all know how difficult it is to concentrate our minds on a given work amid distracting noise.

Dentists should bear this in mind. The operating room should be in the quietest nook that can be selected. Assistants should be trained to handle instruments in such a manner as to render these manipulations noiseless. Equipments should be used that work without friction.

Not long since the writer sat in the waiting room of a prominent dentist. The electric engine in use at the chair made such violent vibrations as to be easily audible in the adjoining room. Imagine the effect it must have on the operator to listen to this harsh grating noise several hours each day. No wonder he quits the chair utterly exhausted at three or four o'clock in the afternoon and who will doubt but that his nerve force is wasted and his efficiency lowered by this useless noise.

Make your operating room a zone of quietude. Strive to eliminate the nerve exhaustion that follows constant and irritating noise.

ORTHODONTIC NEWS AND NOTES

This Department is in charge of Dr. H. C. Pollock, 808-809 Metropolitan Building, St. Louis. To avoid delay, communications in regard to notes should be sent direct.

The Central Association of the Angle Graduates met in Chicago at the La Salle Hotel, Monday, November 9, 1914. The meeting was called to order by the President, Doctor J. A. Burrill.

Dr. E. L. Mitchell reported a technique for making a clamp band which is economical and quick.

The use of the lingual arch as a regulating and retaining appliance was shown by Drs. L. S. Lourie and J. A. Burrill. The principal advantage of the lingual arch is inconspicuousness, which is sometimes very desirable.

Dr. Guy Steadman showed a form of retainer to be used on anterior teeth which require a slight root movement.

"Systems of Records were shown by Drs. Noyes and Lewis. The system employed by Dr. Noyes seems to possess some advantage over others as a working record. Dr. Huff stated that with the use of Dr. Noyes records he was able to conduct his (Dr. Noyes) practice successfully during his enforced absence from the office during the summer.

Dr. Dewey showed models of a case in which there had been extensive root movement by the use of the regular expansion arch and spur.

A talk on the classification of malocclusion, illustrated by lantern slides, was given by Dr. Dewey. Papers on classification published in various journals and books were reviewed and errors pointed out.

As a result of the election of officers, Dr. Martin Dewey, of Kansas City, was chosen President of the society, and Dr. H. C. Pollock, of St. Louis, Secretary. The next meeting will be held in Kansas City.

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Dr. C. A. Hawley, of Washington, D.C., has announced the removal of his offices from The Rochambeau to 1624 F St., N. W., which was formerly the Army and Navy Club.

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Dr. Lloyd S. Lourie, of Chicago, has removed his offices into the New Marshall Field Annex, 25 East Washington Street.

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Dr. Samuel Lewis, of Kalamazoo, Michigan, has recently returned from a three weeks trip visiting the cities of Chicago, Kansas City, Denver, Dallas and St. Louis, which included one week's visit with Dr. Ketcham, of Denver. To his former ample fund of information he is reported to have added many pointers upon orthodontic technique at the expense of his Western friends. From Dr. Frank Sheldon, of Kansas City, he also picked up many pointers in golf technique.

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On October 7, 1914, the dental department of Loyola University was inaugurated at a meeting in Marquette Hall. The first session of the school opened on the following day with twenty-one pupils. There were addresses from Dr. C. V. Vignes, dean of the department; Rev. Father Otis, president of the university; and Dr. Homer Dupuy.

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Dr. W. W. Martin, of the Dewey School of Orthodontia, 1914, has opened an office in the Lathrop Building, Kansas City, Mo.

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The Alumni Society of the Dewey School of Orthodontia is planning a three-day meeting to be held in Kansas City the last week in February. The event, date and program will be published later.

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Dr. J. B. Kohagen announces his location at Duluth, Minn., Suite 602 Fidelity Building, and in the future will devote his entire time to the practice of orthodontia.

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In Hamilton, Ontario, is located Dr. R. G. MacDonald, who announces his practice in the future limited to orthodontia.

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Nomenclature of Popular Pastimes.—A city man recently visited his "country cousin." The man from the city, wishing to explain the joys of metropolitan life, said: "We have certainly been having fun the last few days. Thursday we autoed to the country club and golfed until dark, then trollied back to town and danced until morning." The country cousin was not to be stumped in the least, so began telling of some of the pleasures of the simple life: "We have had pretty good times here, too. One day we buggied out to Uncle Ned's and went out to the back lot, where we baseballed all that afternoon. In the evening we sneaked up into the attic and pokered until morning.' A sturdy old farmer who was listening, not to be outdone, took up the conversation at this point and said: "I was having some fun about this time myself. I muled to the cornfield and gee-hawed until sundown. Then I suppered until dark and piped until nine o'clock, after which I bedsteaded until the clock fived, after which I breakfasted until it was time to go muling again."—*Selected.*